(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
29 March 2001 (29.03.2001)

PCT

(10) International Publication Number
WO 01/21046 A1

(51) International Patent Classification[7]: A47F 5/13, A47B 96/14, 83/00

(21) International Application Number: PCT/IT00/00365

(22) International Filing Date:
15 September 2000 (15.09.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
CN99A000008 21 September 1999 (21.09.1999) IT

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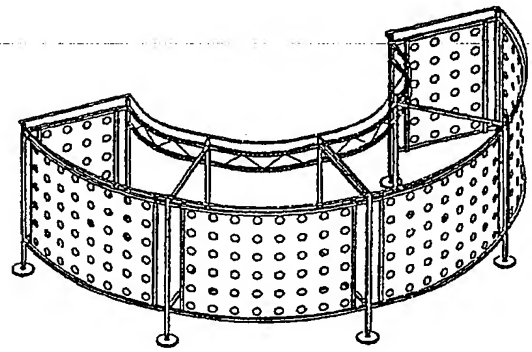
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

**Published:**
— *With international search report.*
— *Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: MODULAR SECTIONAL STRUCTURE



(57) Abstract: Modular sectional structure, particularly suitable for creating furniture pieces, furniture complements or the like, for example tables, small tables, shelvings, expositors, and the like, or for the creation of open or closed areas, for example stands, boxes for fairs, exhibitions, and the like, or for the creation of partition walls, and the like, characterized in that it comprises vertical uprights, each of which is provided in at least one position of at least one lateral fitting for the preferably removable connection of at least one horizontal transversal member, by which it can be connected with at least another vertical upright.

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"MODULAR SECTIONAL STRUCTURE"

The present invention relates to a modular sectional structure for various uses and applications in general, having temporary or permanent character, particularly for building boxes or stands and pavilions, etc., intended for fairs, exhibitions or the like, or for creating indoor and outdoor open or closed areas, for example creation of rooms or areas for various purposes as well as a solution for the subdivision or separation of spaces or passages of rooms, or for example useable as a structure for several applications and uses, such as for furniture pieces, furniture complements or the like, for example tables, small tables for offices, expositors, shelvings, etc.

The specific structures which have been up to now intended to partially perform these functions cannot offer the advantage of practicality while at the same time meeting aesthetic requirements and they not always provide a simple solution or are also comparatively economically advantageous.

Therefore, the main object of the present invention is providing a sectional structure having above all a multiplicity and versatility of uses and possibility of various utilizations according to the desired solutions and needs of the user in various and different activity fields or sectors, wherein assemblage of the constituting members can be carried out easily and quickly so that very little skill is required in the interventions for said assemblage, thus excluding or anyway reducing the need for specialized handwork and also possible suitable auxiliary equipping.

Another object is providing a solution of greater manufacturing simplicity, which nevertheless is statically suitable and reliable, and at the same time showing appraisable aesthetic features.

A further object is allowing various composition possibilities with a limited typological range of constituting members, by providing that some of these constituting members have a large field of uses and adaptability even for the same construction, that is, a single member being able to perform different functions, thus allowing various needs and necessities of the user to be satisfied and also

allowing possible subsequent variations of arrangement and composition of said constituting members of the previous construction, for instance because of the user changed needs, thus avoiding in this case the difficulties of suitable changes or adaptation work.

A further object is allowing said constituting members to be quickly and repeatedly disassembled in order to be assembled again, for instance, in another place with possibly modified composition and arrangement in order to perform also a different function with respect to the previous construction according to the user's needs, with possibility of an easy transportation and moving by means of the usual transportation means.

These objects are obtained according to the invention by means of a modular sectional structure, particularly suitable for the construction of furniture pieces, furniture complements or the like, for instance tables, small tables for offices, shelvings, expositors, etc., or for creating open or closed areas, such as stands, boxes for fairs, exhibitions, etc., or for creating partition walls, etc., characterized in that it comprises vertical uprights, each one being provided, in at least one position, with at least one lateral fitting for the preferably removable connection with at least one horizontal transversal member, by which it can be connected to at least one other vertical upright.

According to one feature of the invention one type of upright is provided, in at least one position, with only one lateral fitting, in order to be connected with another vertical upright by a respective transversal member.

According to a further feature a type of upright is provided in at least one position in height with two or more lateral fittings which are substantially arranged in the same horizontal plane but oriented in different directions, in order to connect said upright with two or more other uprights by means of a corresponding number of transversal members.

These and other features of the invention and the advantages deriving therefrom will appear more clearly from the following detailed description of some preferred ones among the advantageous and various embodiments of the invention, illustrated by way of non limiting example in the accompanying sheets

of drawings, wherein:

figs. 1 to 4 show elevational views of some types of uprights according to the invention;

figs. 1a, 2a, and 3a are views from the top of the uprights according to figs. 1, 2 and 3;

figs. 5 to 8 show some types of crosspieces of the structure according to the present invention;

fig. 9 shows a perspective view with cutaway portions of a type of joint with expansion pin of the structure according to the invention;

figure 10 shows a perspective view of another type of pliers joint of the structure according to the invention;

figs. 11 to 14 show perspective views of some examples of table structures, made according to the invention;

figs. 15, 16 and 17 show perspective exploded views of further embodiments of table structures according to the invention;

figs. 18 to 20 show perspective views of some embodiments of structures according to the invention having an arched conformation;

figs. 21 to 35 show in elevation further types of uprights according to the invention;

figs. 21a to 35a are views from the top of the uprights according to figs. 21 to 35;

figs. 36 to 47 show perspective views of some types of panels used as transversal members in the structures according to the present invention;

figs. 48 to 53 show in perspective view some embodiments of structures made according to the invention, formed of some of the uprights according to figs. 21 to 35 and of some of the panels according to figs. 36 to 47;

figs. 54 to 66 show perspective views of some embodiments of panels of the structure according to the present invention;

figs. 67 to 71 show perspective views of some embodiments of constructions, such as confined areas, boxes, stands and the like, made according to the invention.

With reference to the drawings, the structure according to the invention, suitable for various uses and applications, comprises in modular coordination, members which are statically suitable for performing upright function and provided with crosspieces or lateral fittings intended to be associated and suitable for allowing union with structural members for the connection of at least two uprights, so that according to their position with respect to the upright and to their distance, various configurations and geometrical combinations can be obtained, with wide composition possibilities according to the desired solution, since said uprights and crosspieces are modularly conformed so as to form altogether junctions having two, three or four ways, so as to allow couplings with other structural members in different directions, by providing for means for joining together and reciprocally fixing said different members, so as to allow the assemblage of the whole structure with easy, simple and quick repetitive operations, and being the so conformed structure suitable for allowing easy variations and modifications of the composition and with the possibility of a likewise easy, simple and quick disassemblage, re-assemblage and re-use of the components of said structure.

The structure comprises uprights, provided in appropriate typological variability, as a function of the position of lateral fittings 200 and their number, of the angular arrangement in the same horizontal plane, preferably at 90° from each other or multiples thereof, of the distance from the upper and lower end of the uprights, of the vertical distance between them and all that with reference to the type of transversal member to be associated and therefore with reference to the various employment necessities. This concept and these variables give rise therefore to a number of embodiments, of which some examples are illustrated in the sheets of the accompanying drawings.

Figs. 1, 2, 3 and corresponding figs. 1a, 2a, 3a illustrate a type of upright, respectively 101, 102 and 103, whose upper portion is provided with fittings or pairs of fittings 200, which are superposed and shortly spaced, arranged in a horizontal plane angularly spaced from each other, particularly by 90°, in order to form junctions having two, three and four ways respectively.

Uprights 104, 105, 106, 107 and 108 of figs. 21 to 25 and respective views of figs. 21a to 25a show pairs of fittings 200 at a relatively small distance from the upper end, whereas the other fittings or lower pairs of fittings 200 are arranged at a certain distance from the lower end, possibly vertically aligned or staggered if in several superposed rows, in order to give rise to junctions having two, three ways and again two, three and two ways respectively.

The types of uprights 109, 110, 111, 112 and 113 of figures 26 to 30 have lateral fittings or fitting pairs 200 substantially near to the upper end, whereas the other fittings or lower fitting pairs 200 are provided at a relatively short distance from the lower end, possibly vertically aligned or staggered if in several superposed rows, in order to respectively determine junctions having two, three ways and again two, three and two ways respectively. Similarly, figs. 31 to 35 and respective figs. 31a to 35a show other types of uprights 114, 115, 116, 117 and 118 wherein the lateral fittings 200 are positioned in a various way in order to give rise to junctions having two, three ways and again two, three and two ways respectively.

All the uprights are preferably tubular and into their lower ends are insertable, according to the cases, a supporting foot 201 (fig. 1) or a preferably spinning and/or brakable roller 202 (fig. 4).

To said uprights are associated, by means of fittings 200, transversal members having different conformations, for instance straight, or curved, in particular arched, preferably horizontally, provided in suitable dimensional range and typology, according to the needs of use.

In fig. 5 the transversal member consists of a lattice crosspiece 301 longitudinally provided with two parallel tubular bars 302, whereas in fig. 6 it consists of a plate-shaped member 303 having holes and provided again with similar longitudinal bars 304, in fig. 7 it consists of a curved lattice crosspiece 305 with relevant longitudinal bars 306, or it may consist in a crosspiece having the shape of a bar 307 (fig. 8) which can have any profile in transversal cross-section, for example round or polygonal, and is preferably tubular.

One type of transversal member can consist in a panel which can extend

substantially over the whole height of the upright or at least over the main part of the upright height.

Some embodiments of said panel transversal member are shown in figs. 36 to 47 and 54 to 66.

Said panels can be provided continuous, such as for example panels 308 and 309, in the version provided with holes, such as in panels 310 and 311, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, which are straight, or also in the curved version, such as in panels 312, 313, 314, 315, 316, 317, 318, 319, 331, 332. Said panels are different from each other, for dimensional features and also for the typology of the holes which can have any arrangement and pattern and size, and therefore also different from the illustrated ones.

Each panel is strengthened by a perimetrical frame or is carried by the same, and this frame can be provided on the side of the panel which is in sight (front side) and/or on the opposite side (back side) of the panel itself.

Each frame of the panel comprises two bars 350 (fig. 36) rectilinear or arched according to the above mentioned versions, preferably horizontal and parallel to each other, provided on the same side of the panel and connected by means of two other bars 351 (fig. 36) preferably vertical and parallel to each other, provided on the same side of horizontal bars 350 or on the opposite side of the panel. This is determined also by the use needs and by aesthetic needs of the desired construction, being necessary to provide in some cases fittings turned towards the internal side, such as with panels 312, 313, 314, 315, 331, or towards the external side in the other panels illustrated as embodiments.

Said transversal members can be associated to the uprights by virtue of unbendable connecting joints which can be used at lateral fittings 200.

In the embodiment shown in fig. 9, a type of connecting joint between a lateral fitting of an upright and a transversal member comprises a first tubular joining portion, integral with the upright, and a second tubular joining portion, which is coaxial to the first portion and integral with the transversal member, for example bar 302 of member 301, as well as an expansion pin indicated as a whole with 340, partially insertable with its ends into said tubular portions and radially

expandable, by means of a screw 341 for opening portions thereof 340' and 340" which are complementary to each other and longitudinally matchable and screwed in accessible way in a median collar of expansion pin 340.

In the embodiment of fig. 10 another type of connecting joint between a lateral fitting of an upright and a transversal member comprises a joining clip indicated as a whole with 342 with a pair of jaws 342' and 342" which can be tightened and blocked, for instance to the upright, or to bars of the transversal member, by means of a tightening screw 343, at least one of the jaws, in particular jaw 342', being provided with a tang insertable in a tubular joining portion for instance of the transversal member.

According to one feature of the invention, constructions which can extend vertically are allowed, since two or more uprights are insertable one in the other so as to form a correspondingly longer upright, or extend longitudinally with transversal members having possibly a different length and particularly panels having different vertical and/or horizontal extension, or two or more superposed rows of uprights can be provided, reciprocally connected by means of transversal members formed in particular of flat or curved panels, in particular for forming walls having corresponding height, equippable on one or both sides with accessories (not shown), with superposition of panels on panels.

According to a feature of the invention said structure comprising the above described components allows the assembly of constructions, such as furniture pieces, furniture complements or the like, for example tables, small tables for offices, shelvings, expositors, etc., or for creating open or closed areas, for example stands, boxes for fairs, exhibitions, etc., or for creating partition walls, etc.

Some embodiments of said constructions are shown, for example, in figs. 11, 12, 13 and 14 such as tables, respectively 401, 402, 403 and 404, with relevant working surfaces using the types of upright of figs. 1 and 2, whereas figs. 15, 16 and 17 show other types of tables 405, 406, and 407 with relevant shelf accessories, 408, 409, 410, 411 respectively and again using the uprights substantially of the type of fig. 1.

Figs. 18, 19 and 20 show embodiments relevant to reception tables 412, 413, 414, having curved conformation, comprising transversal members 305 (fig. 7) and 301 (fig. 5) and using uprights substantially of the type of figs. 1 and 2.

Figs. 48, 49 and 50 show further embodiments of structures according to the invention, consisting in reception tables 415, 416 and 417 comprising uprights of the type of figs. 21 to 30, with straight panels provided with holes of figures 38 and 39, crosspieces of fig. 5.

Figs. 51, 52 and 53 show other embodiments consisting in curved reception tables 418, 419 and 420 comprising uprights of figs. 31 to 35, crosspieces 305, bars 307, flat and curved panels provided with holes of figs. 38 to 47.

Figs. 67, 69, 70 and 71 show further embodiments consisting in creations such as stands, whereas fig. 68 shows an exposing structure, all said embodiments comprising panels of figs. 36 to 47 and figs. 54 to 66.

In said embodiments the above mentioned panels form curtain walls, partition walls of rooms, subdivision of passages of rooms, etc., equippable on both sides so that it is possible to apply accessories (not shown) such as shelves, brackets, etc., all in modular coordination and in harmony with the preceding creations, such as tables, small tables, etc.

It must be specified that the connecting joints between the lateral fittings and transversal members can consist of male-female fittings.

From the above it is apparent that the invention is not limited to the embodiments herewith described and illustrated by way of a non limiting example, but it can be widely changed and modified as a whole and in the particulars thereof, according to the specific needs and convenience of manufacture and use, above all from a constructive point of view and within the limits of the technical and functional equivalents, without leaving the information principle above explained and claimed in the following.

CLAIMS

1. Modular sectional structure, particularly suitable for creating furniture pieces, furniture complements or the like, such as tables, small tables for offices, shelvings, expositors, and the like, or for creating open or closed areas such as stands, boxes for fairs, exhibitions, and the like, or for creating partition walls, and the like, characterized in that it comprises vertical uprights each of which is provided in at least one position of at least one lateral fitting for the preferably removable connection of at least one horizontal transversal member, by which it can be connected with at least another vertical upright.
2. A structure according to the preceding claim, characterized in that one type of upright is provided in at least one position thereof with only one lateral fitting, in order to be connected to another vertical upright by means of a relevant transversal member.
3. A structure according to claim 1, characterized in that one type of upright is provided in at least one position in height with two or more lateral fittings which are substantially in the same horizontal plane, but oriented in different directions, in order to connect said upright to two or more other uprights by means of a corresponding number of transversal members.
4. A structure according to one or more of claims 1 to 3, characterized in that one type of upright is provided, on at least one side thereof, with two or more lateral fittings which are arranged at different positions in height but substantially in the same vertical plane, in order to connect said upright to one or more other uprights by means of at least two transversal members substantially parallel to each other and vertically spaced and/or by means of at least one transversal member connected to the upright in at least two vertically spaced positions.
5. A structure according to one or more of the preceding claims, characterized in that one type of transversal member is formed of a bar-shaped crosspiece which can have any profile in cross-section, for example a round or polygonal profile, and is preferably tubular.
6. A structure according to one or more of claims 1 to 4, characterized in that one type of transversal member is formed of a crosspiece having a certain longitudinal

extension and is formed for example of a plate-shaped crosspiece or a lattice cross-piece or a cross-piece having an I-shaped profile with a preferably lightened core, or the like.

7. A structure according to one or more of claims 1 to 4, characterized in that one type of transversal member is formed of a panel which extends substantially over the whole height of the upright or at least over the main portion of the upright height.
8. A structure according to claim 6, characterized in that the panel is made continuous or grated or is provided with holes.
9. A structure according to claims 7 and 8, characterized in that the panel is reinforced by a perimetrical frame or is carried by the same, and this frame can be provided on the side in sight (front side) of the panel and/or on the opposite side (back side) of the panel itself.
10. A structure according to claim 9, characterized in that the panel comprises two rectilinear or arched bars, preferably horizontal and parallel to each other, provided on the same side of the panel and connected to each other by means of other two bars, preferably vertical and parallel to each other, provided on the same side of the horizontal bars or on the opposite side of the panel.
11. A structure according to one or more of the preceding claims, characterized in that one type of transversal member is straight and possibly flat.
12. A structure according to one or more of claims 1 to 11, characterized in that one type of transversal member is curved and particularly arched, preferably horizontally.
13. A structure according to one or more of the preceding claims, characterized by a plurality oftransversal members having different length and in particular by a plurality of panels having different vertical and/or horizontal extension.
14. A structure according to one or more of the preceding claims, characterized in that the transversal members are provided in suitable dimensional range, according to the need of use.
15. A structure according to one or more of the preceding claims, characterized in that at least one lateral fitting of the upright is provided with only one connecting joint

with a relevant transversal joint.

16. A structure according to one or more of the preceding claims, characterized in that at least one lateral fitting of the upright is provided with two or more connecting joints positioned at different heights and/o oriented in different horizontal directions.

17. A structure according to one or more of the preceding claims, characterized in that the uprights are preferably tubular.

18. A structure according to one or more of the preceding claims, characterized in that into the lower end of the uprights are insertable, according to the cases, a supporting foot or a preferably spinning and/or brakable roller.

19. A structure according to one or more of the preceding claims, characterized in that two or more uprights are insertable into each other so as to form a correspondingly longer upright.

20. A structure according to claim 19, characterized by two or more superposed rows of uprights connected to each other by means of transversal members formed in particular of flat or curved panels, in particular for forming walls having corresponding height, with superposition of panels on panels, equippable on one or both sides with accessories.

21. A structure according to one or more of the preceding claims, characterized in that into the upper end of the uprights is insertable a supporting member for a plane.

22. A structure according to one or more of the preceding claims, characterized in that one type of upright is provided in the upper portion thereof, at a relatively short distance from its upper end and in positions which are angularly spaced from each other, particularly of 90°, of one or more pairs of lateral fittings vertically superposed and at a short distance between each other.

23. A structure according to one or more of claims 1 to 22, characterized in that a type of upright is provided, in the upper portion thereof, at a relatively short distance from the upper end thereof, of a first pair of lateral fittings parallel to each other, vertically superposed and at a short distance from each other, and of a single lateral fitting preferably provided at the height of one of the lateral fittings of said pair of fittings and horizontally staggered with respect to it, in particular of 90°.

24. A structure according to claim 23, characterized in that the upright is provided with a further lateral fitting, parallel to the single fitting and arranged in the same vertical plane in the middle part of the upright or in the lower part of the upright itself at a relatively short distance from the lower end thereof.

25. A structure according to claims 23 or 24, characterized in that the upright is provided with a second pair of lateral fittings parallel to each other, vertically superposed and at a short distance from each other, horizontally coplanar with the fittings of the first pair and horizontally staggered with respect to it, in particular of 90° and 180°.

26. A structure according to one or more of the preceding claims, characterized in that a type of upright is provided in the upper portion thereof at a relatively short distance from its corresponding upper end, of two lateral fittings substantially horizontally coplanar and aligned with each other or staggered of 90° or 180° or 270°, and which upright is provided in the middle part thereof at a relatively short distance from its relevant lower end with two other lateral fittings substantially horizontally coplanar and aligned to each other or staggered of 90° or 180° or 270°.

27. A structure according to one or more of the preceding claims, characterized in that one type of connecting joint between a lateral fitting of one upright and a transversal member is formed on a male-female fitting.

28. A structure according to one or more of the preceding claims, characterized in that one type of connecting joint between a lateral fitting of an upright and a transversal member comprises a first tubular joining portion integral with the upright and a second tubular joining portion, coaxial with the first one and integral with the transversal element, as well as an expansion pin partially insertable with the ends thereof into said tubular portions and radially expandable by means of a screw for opening complementary portions thereof and longitudinally matchable and screwed in accessible way in a median collar of the expansion pin.

29. A structure according to one or more of the preceding claims, characterized in that a type of connecting joint of a lateral fitting of an upright and a transversal member comprises a joining pliers with a pair of jaws which can be tightened and

blocked, for instance to the upright, or to perimetrical bars of the transversal member, by means of a tightening screw, at least one of the jaws being provided with a tang insertable in a tubular joining portion for instance of the transversal member.

30. A sectional structure according to one or more of the preceding claims, which can be used for various uses and applications and comprising, in modular coordination, statically suitable members for performing as uprights and provided with crosspieces or lateral fittings intended to be associated and suitable for allowing the connection with structural connecting members of at least two uprights, so that according to their position with respect to the upright and to their distance various configurations and geometric combinations can be obtained, with wide possibilities of composition according to the desired solutions, since the uprights and the crosspieces are modularly shaped so as to form as a whole junctions having two, three and four ways, so as to allow connection with other structural members in different directions, by providing for means for joining together and reciprocally fixing said different members, so as to allow the mounting of the whole structure with easy, simple and quick repetitive operations, and being the so conformed structure suitable for allowing easy variations and modifications of the composition and with the possibility of likewise easy, simple and quick disassemblage, re-assemblage and re-use of the components of said structure.

31. Modular sectional structure as described in the preceding description as well as any portion thereof taken singularly or in combination.

Fig.5

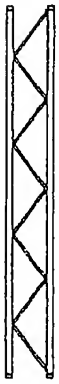


Fig.6

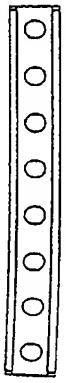
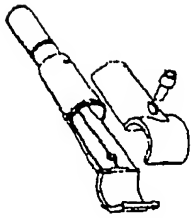


Fig.7

Fig.8

Fig.10



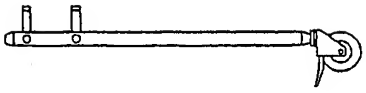


Fig.4

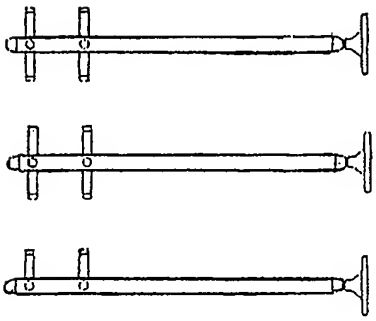


Fig.1 Fig.2 Fig.3

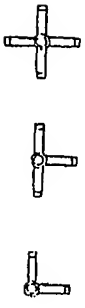


Fig.1a Fig.2a Fig.3a

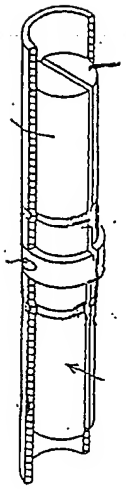


Fig.9

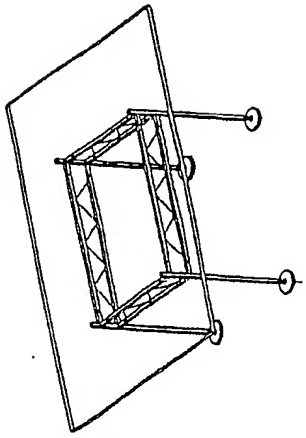


Fig. 12

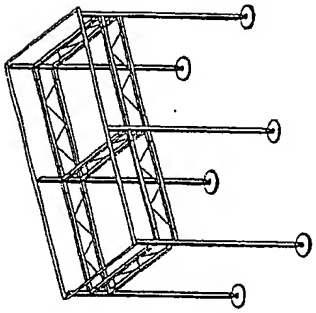


Fig. 14

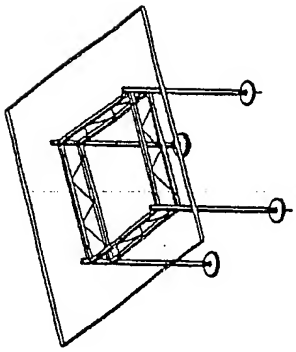


Fig. 11

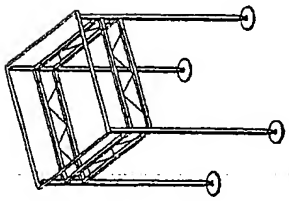


Fig. 13

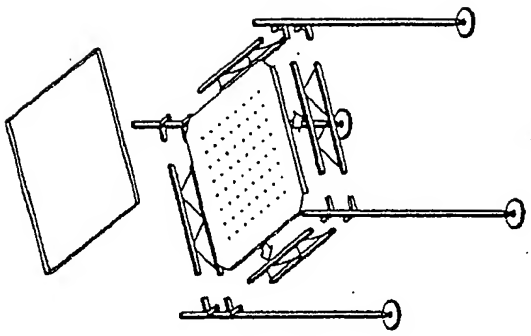


Fig. 16

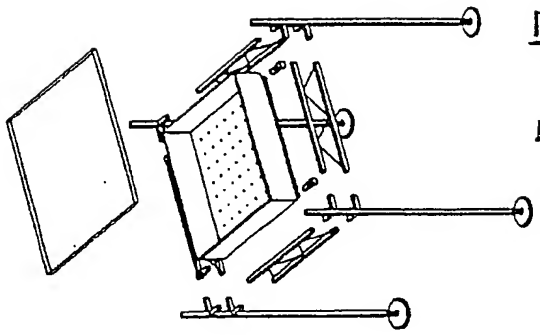
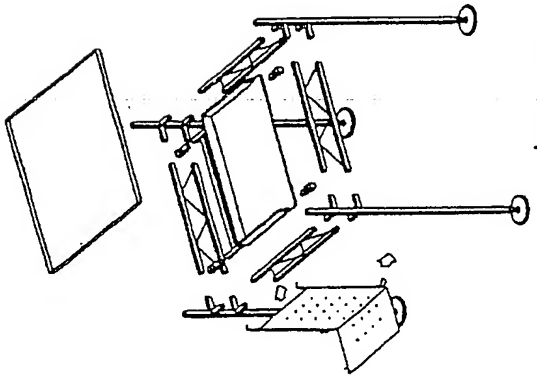


Fig. 17



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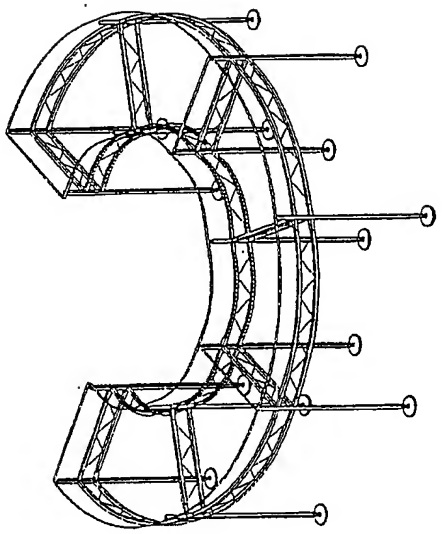
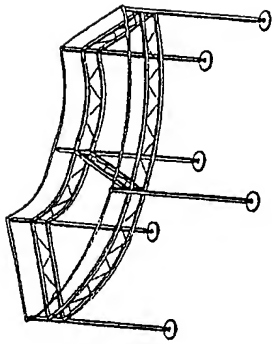


Fig. 20



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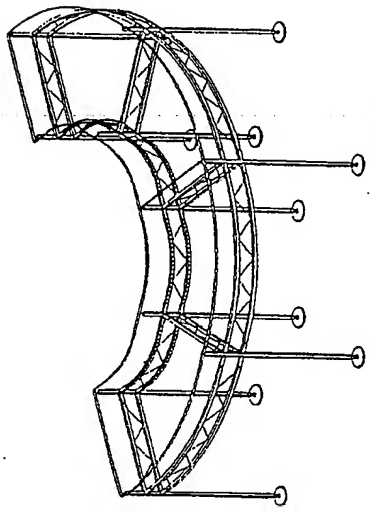


Fig. 19

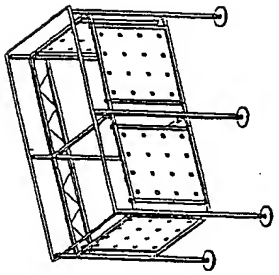


Fig. 49

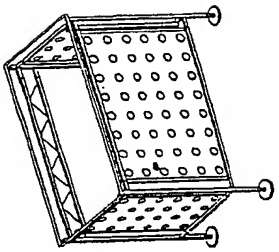


Fig. 50

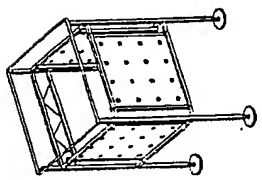


Fig. 48

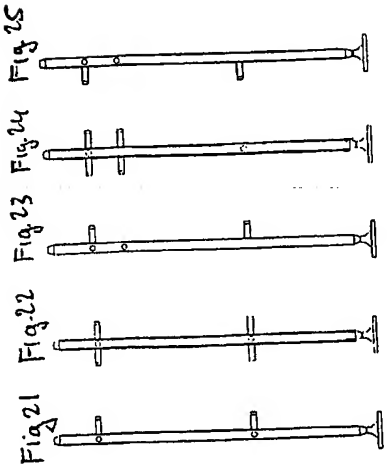


Fig. 21 Fig. 22 Fig. 23 Fig. 24 Fig. 25

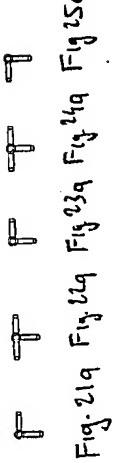


Fig. 21a Fig. 22a Fig. 23a Fig. 24a Fig. 25a

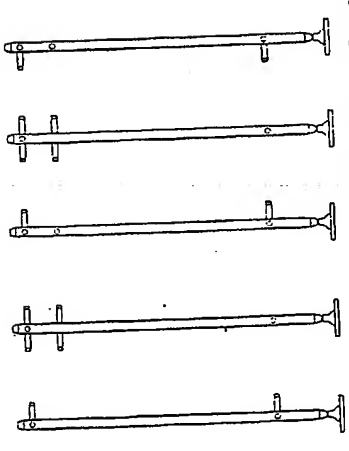


Fig. 26 Fig. 27 Fig. 28 Fig. 29 Fig. 30

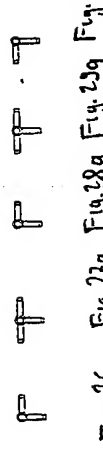


Fig. 26a Fig. 27a Fig. 28a Fig. 29a Fig. 30a

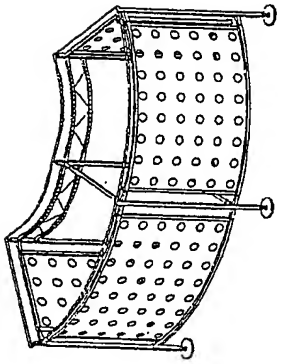


Fig. 51

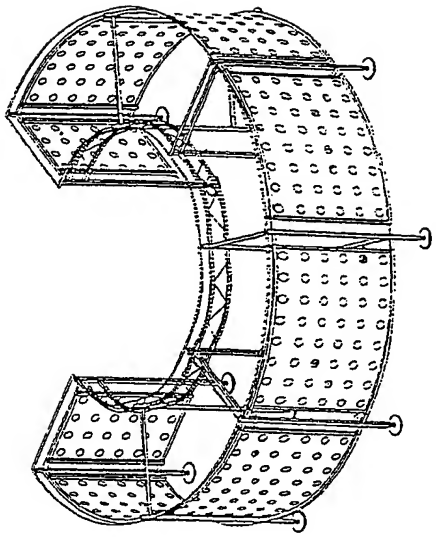


Fig. 53

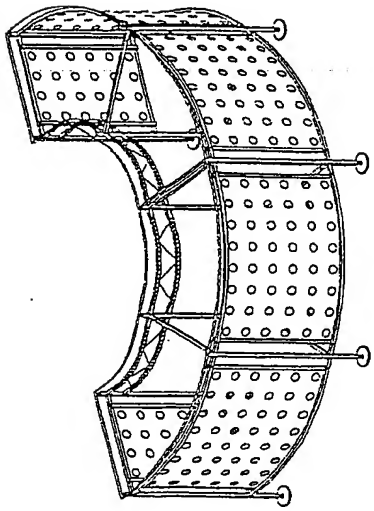


Fig. 52

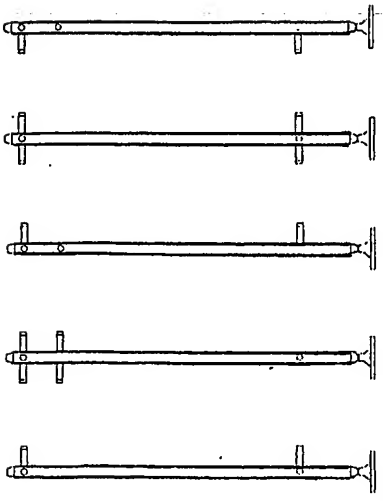


Fig. 31 Fig. 32 Fig. 33 Fig. 34 Fig. 35

Fig. 31a Fig. 32a Fig. 33a Fig. 34a Fig. 35a

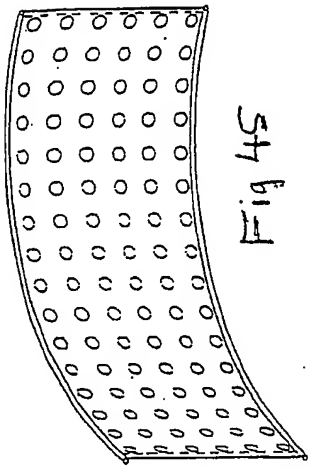


Fig 45

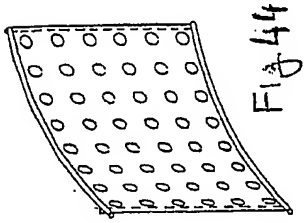


Fig 44

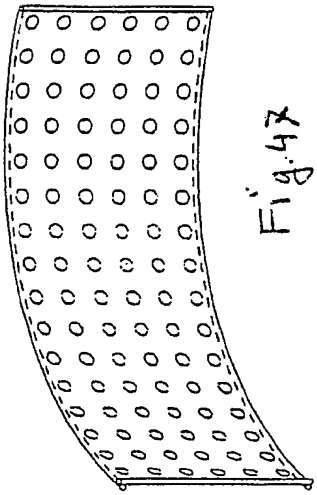


Fig. 47

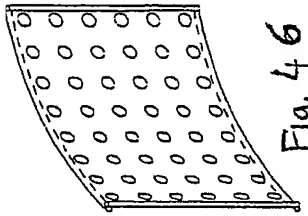


Fig. 46

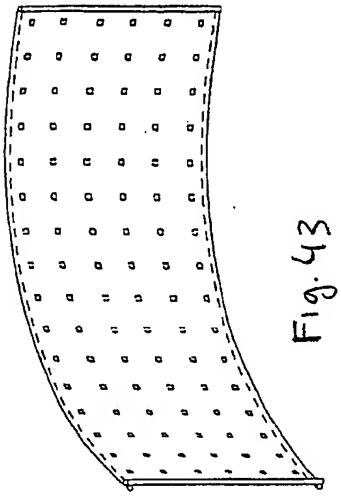


Fig. 43

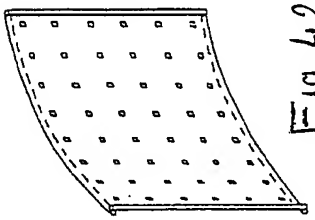


Fig 42

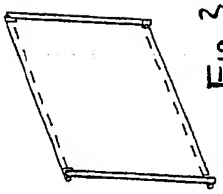


Fig. 37

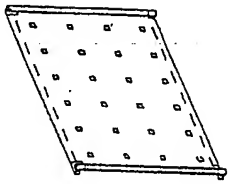


Fig. 39

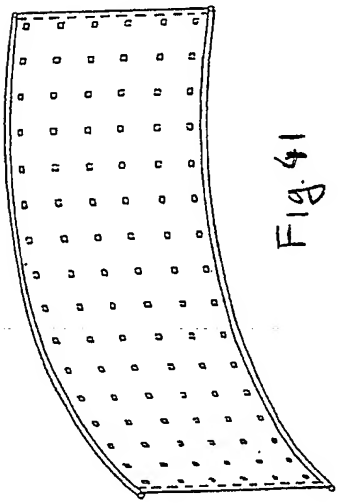


Fig. 41

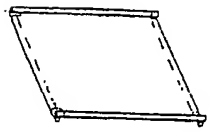


Fig. 36

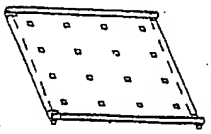


Fig. 38

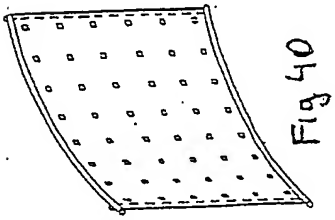


Fig 40

Fig. S6

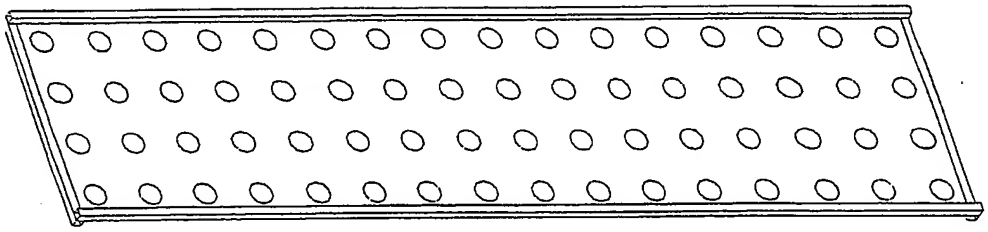


Fig. S5

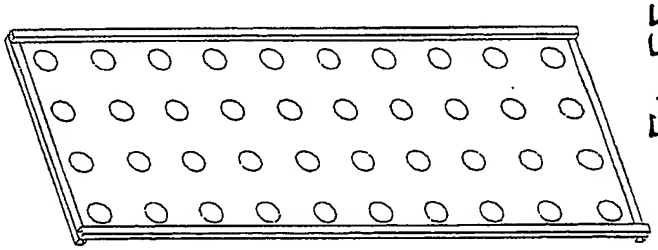
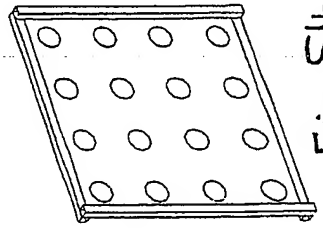


Fig. S4



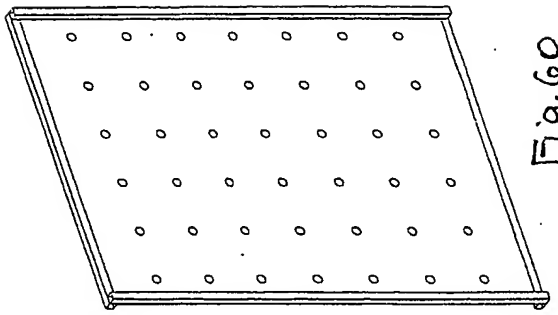


Fig.60

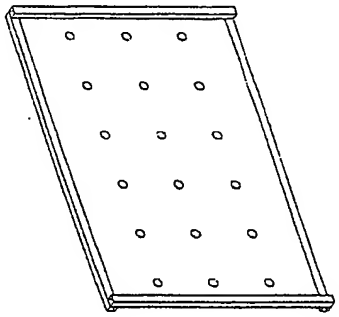


Fig.59

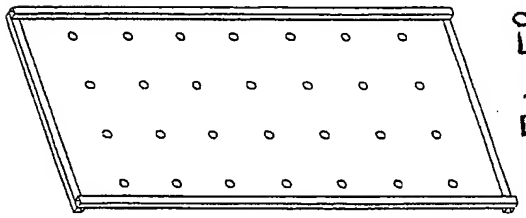


Fig.58

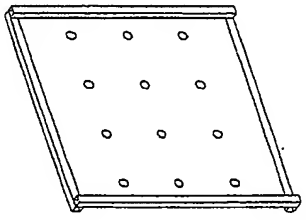


Fig.57

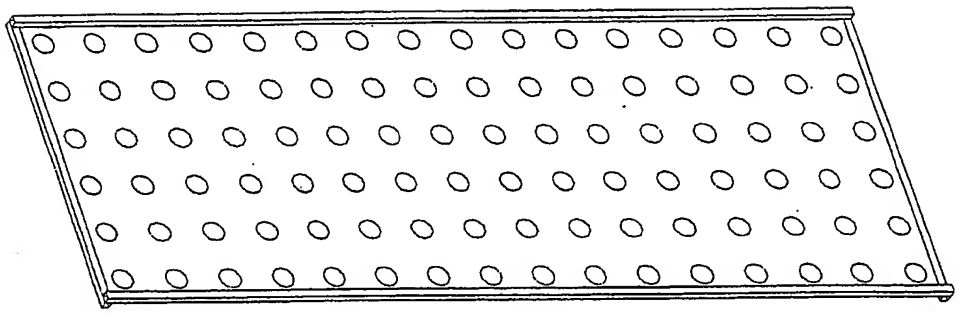


Fig.64

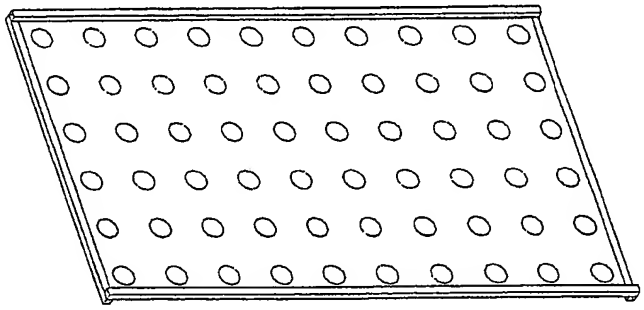


Fig.63

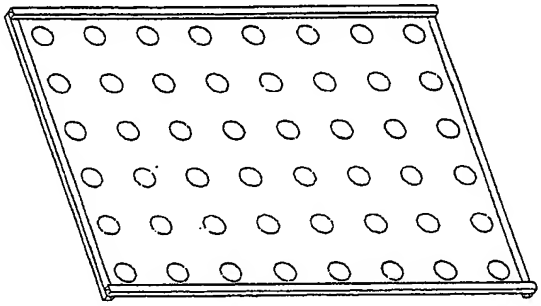


Fig.62

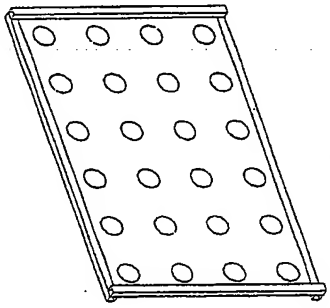


Fig.61

Fig. 5

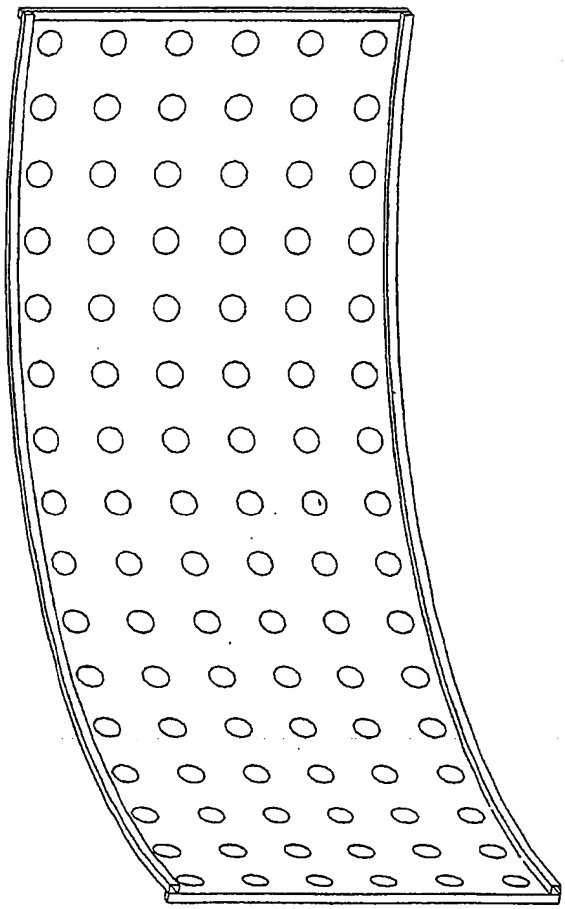
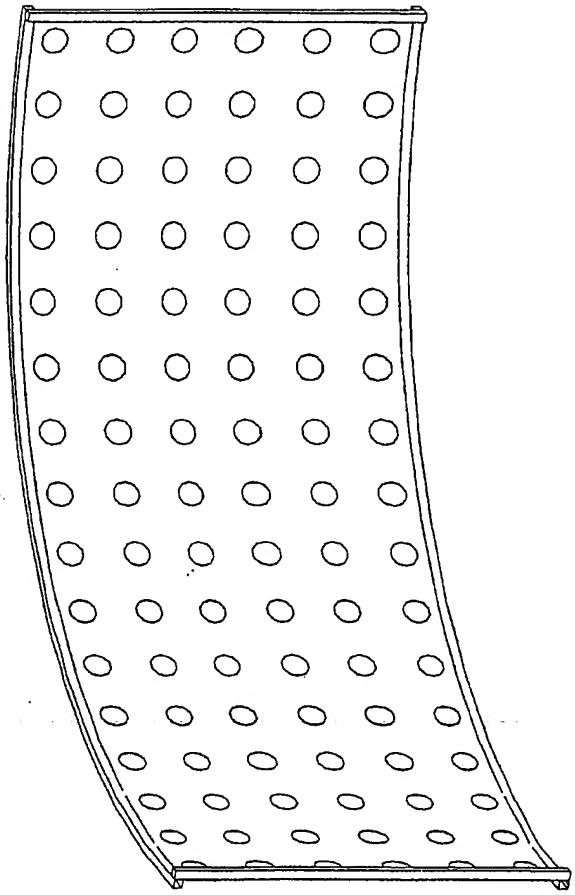


Fig. 6



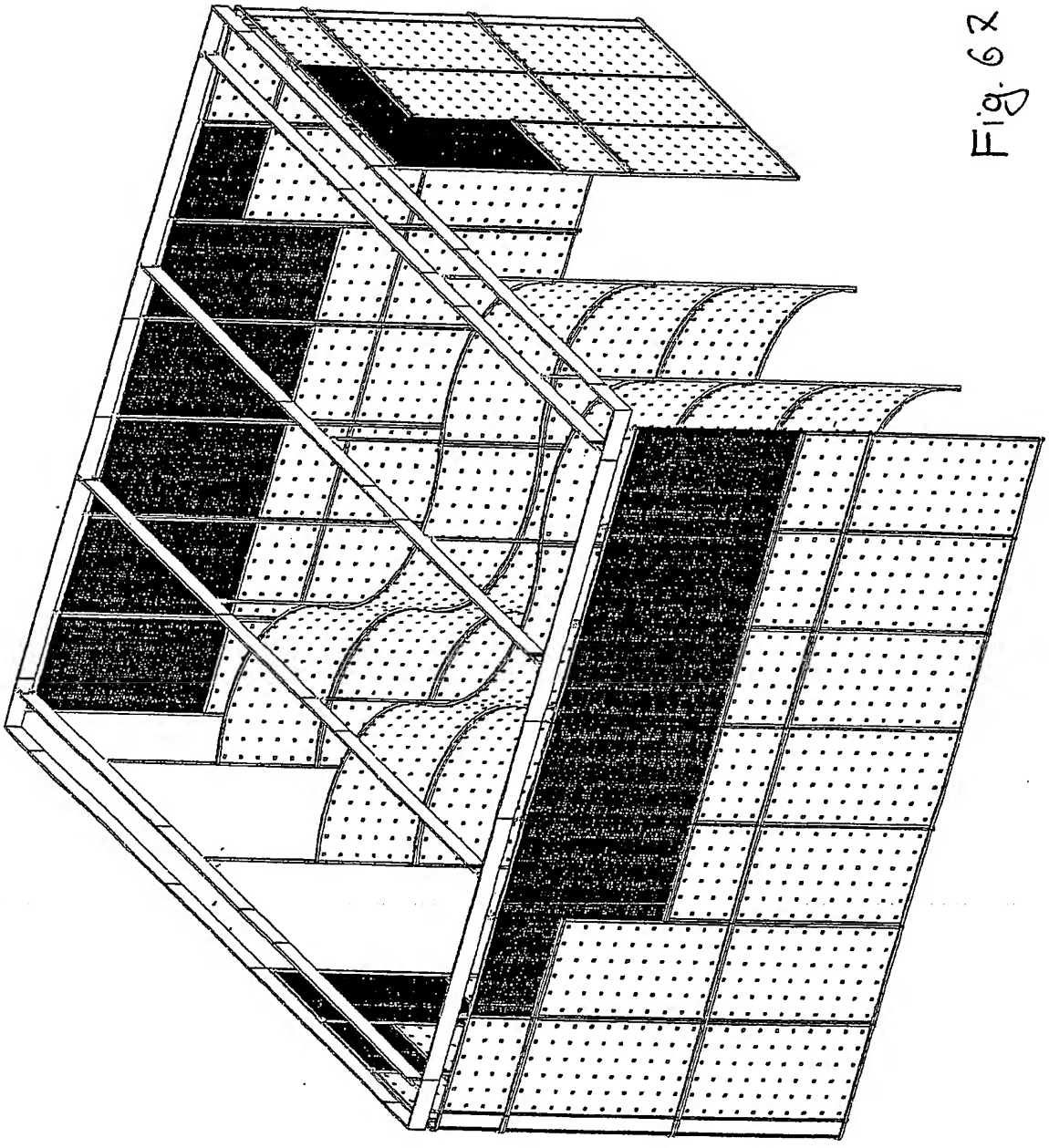
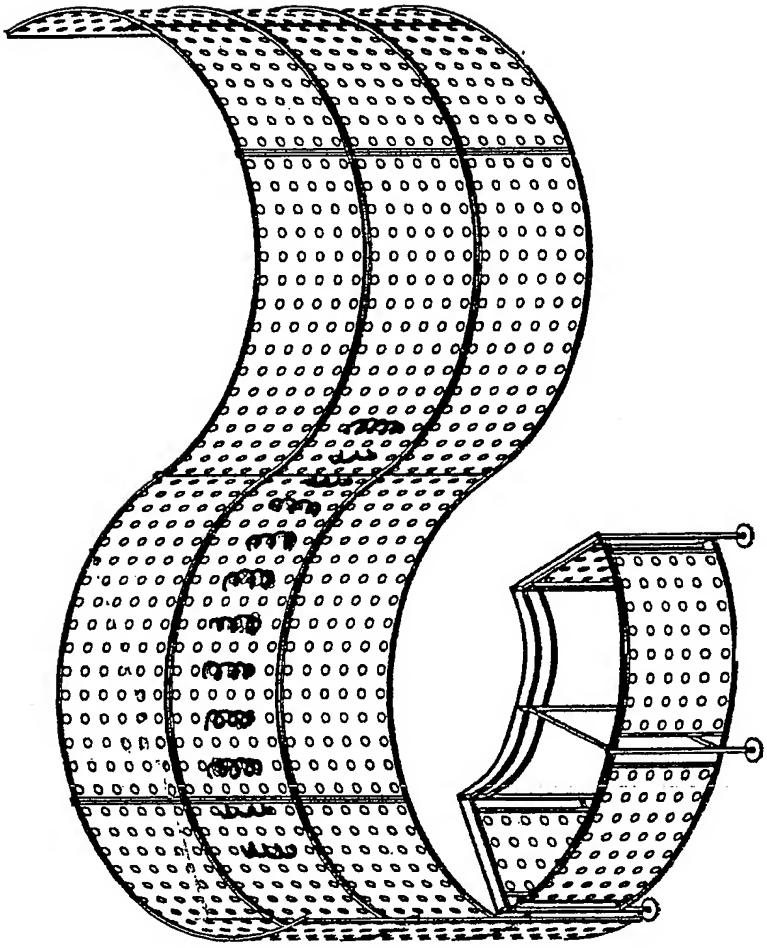


Fig. 6z

Fig. 68



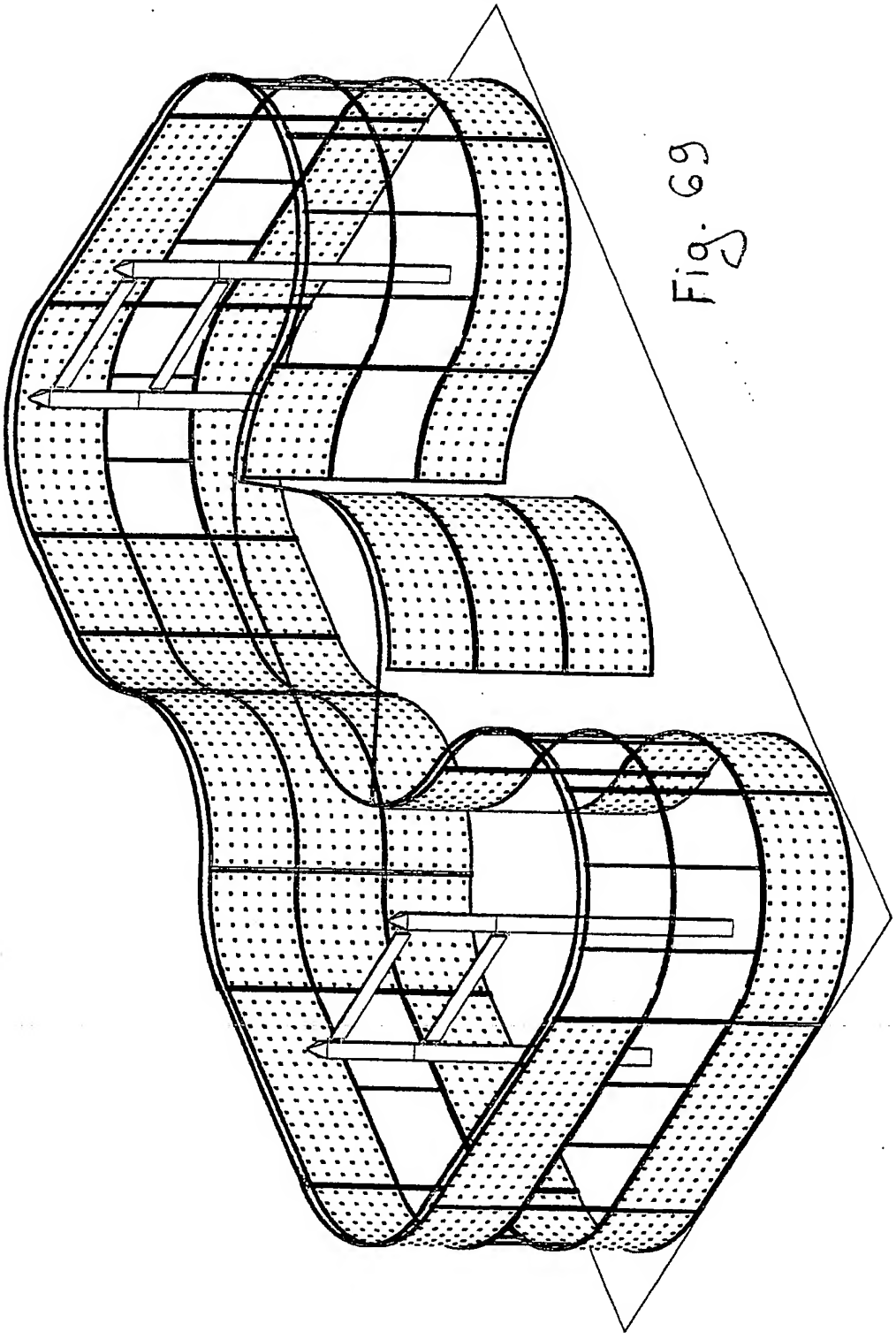


Fig. 69

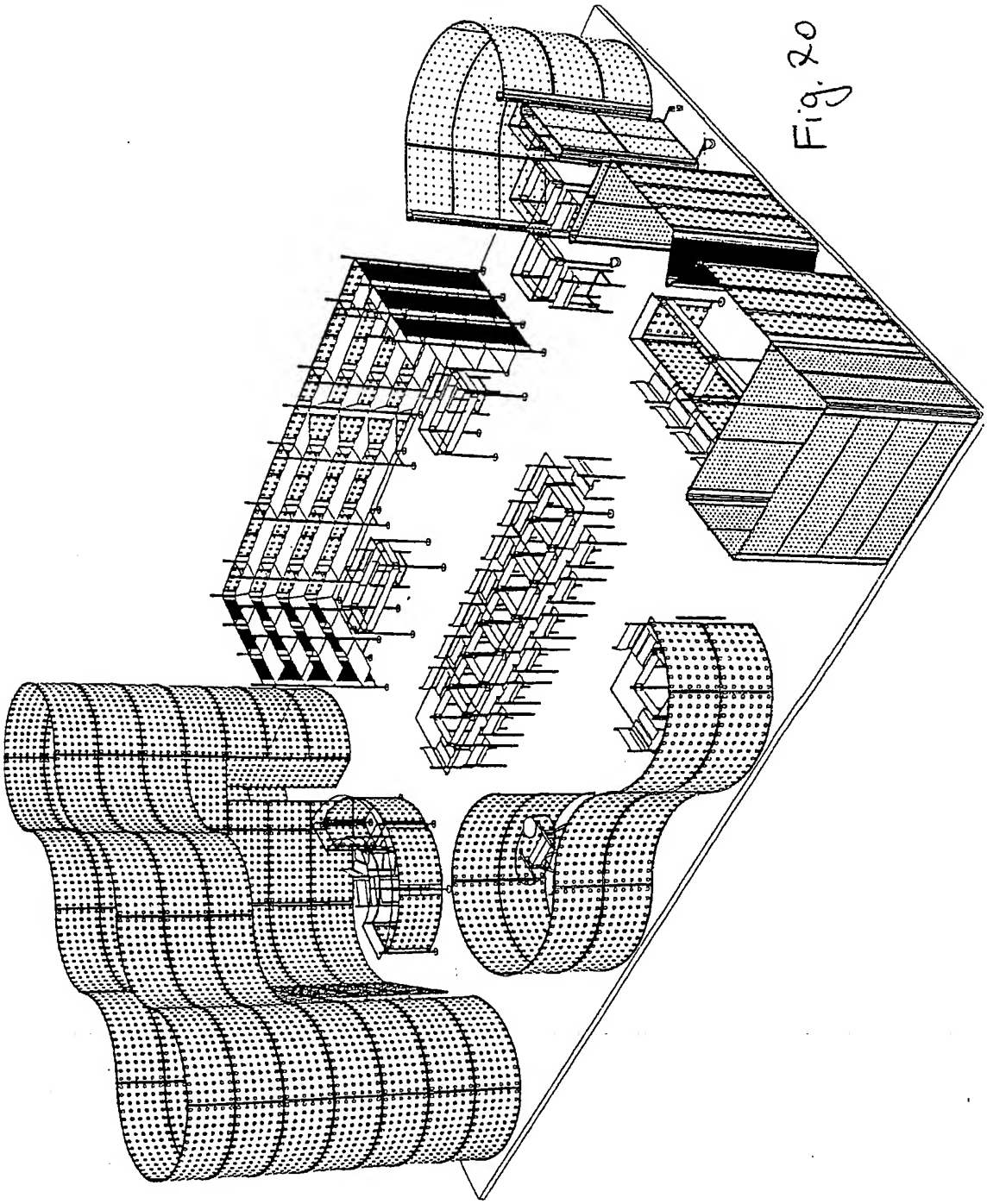


Fig. 20

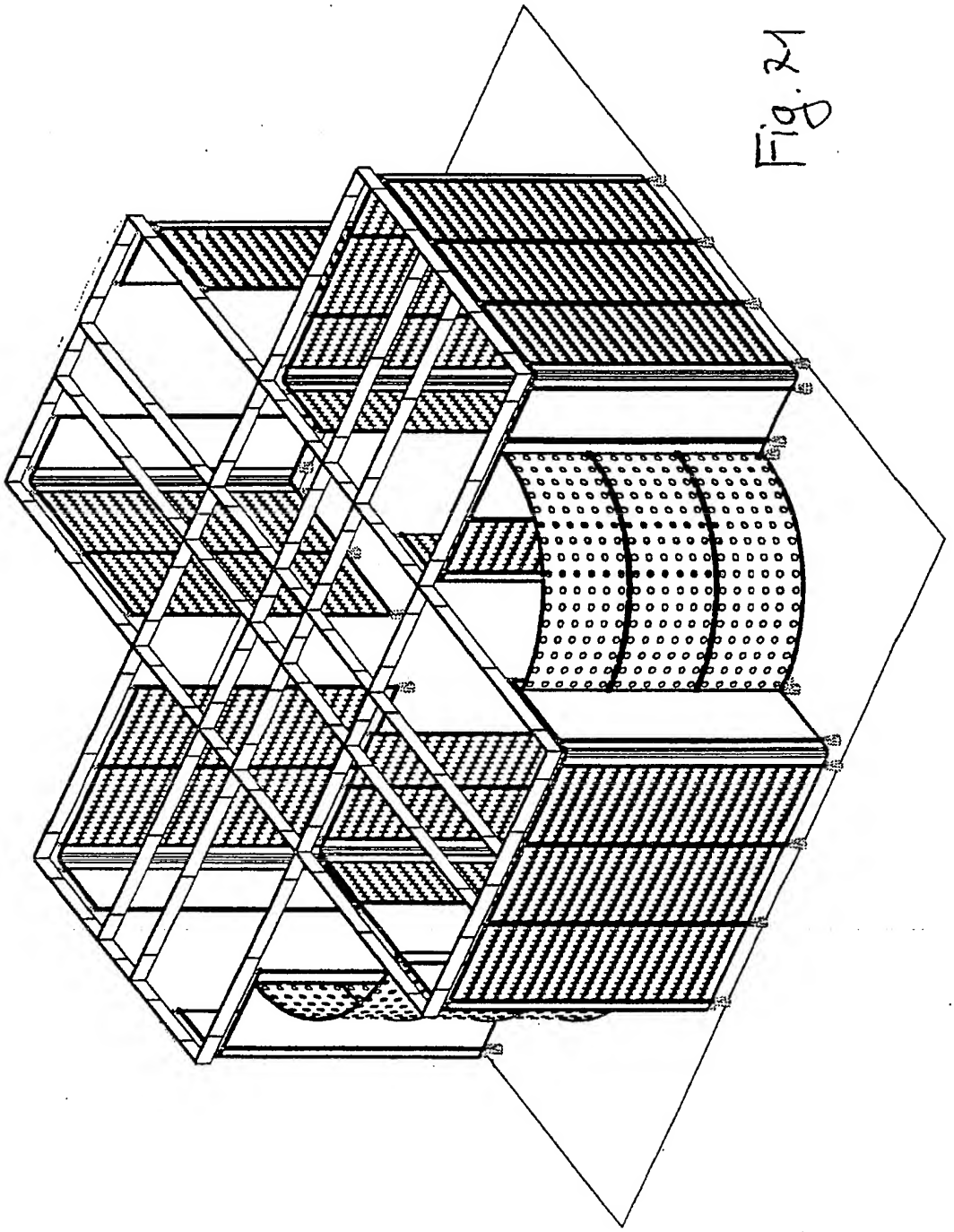


Fig. 21

# INTERNATIONAL SEARCH REPORT

International Application No:
PCT/IT 00/00365

A. CLASSIFICATION OF SUBJECT MATTER
A47F5/13,A47B96/14,A47B83/00

According to International Patent Classification (IPC) or to both national classification and IPC[7]

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A47B,A47F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| Y | DE 4019839 A1<br>(LIMBERG, K. et. al.)<br>14 November 1991,<br>the whole document.<br><br>-- | 1-5,7,<br>8,11,<br>12,13-<br>18,20-<br>23,27,<br>28,30 |
| Y | US 3797948 A<br>(WEININGER)<br>19 March 1974,<br>figs. 1,2,6-8.<br><br>-- | 1-5,7,<br>8,11,<br>13-18,<br>20-23,<br>27,28,<br>30 |
| Y | EP 0458264 A1<br>(C.O.M. S. COOP.A.R.L.)<br>27 November 1991,<br>paragraph 5, lines 49-52,<br>figs. 5,6. | 12 |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 06 December 2000 | 02. 03. 2001 |

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| European Patent Office, P.B. 5818 Patentlaan 2<br>NL – 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016 | VELINSKY-HUBER |

Form PCT/ISA/210 (second sheet) (July 1992)

# INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IT 00/00365

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| A | EP 0670125 A1 (CASTELLI S.p.A.) 06 September 1995, paragraph 2, line 56 - paragraph 3, line 20, paragraph 8, lines 1-28, figs. | 1,5-8, 11,18-20,30 |
| A | GB 2246597 A (ANTHONY WHITHAM) 05 February 1992, page 6, paragraph 1 - page 8, paragraph 1, page 9, paragraphs 4,5, figs. 2,4,5. | 1,5,6, 28,29 |
| A | FR 2702641 A1 (CORESIGN) 23 September 1994, the whole document. | 1,5,6 |

## ANHANG

Zum internationalen Recherchenbericht über die internationale Patentanmeldung Nr.

## ANNEX

To the International Search Report to the international Patent Application No.

## ANNEXE

Au rapport de recherche international relativ à la demande de brevet international n°

PCT/IT 00/00365 SAE 304986

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned search report. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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